

CLAIMS

1. An arrangement for registration of signals, such as EEG and ECG, from an object (P) using transducers (T1, T2) in noisy environments, such as in airplane, car, industrial establishment, magnetic resonance imaging unit, intensive care unit and operating theatre, where appear other significant electromagnetic energy which is being coupled to arrangement of registration and which considering use of signals decreases their utility value or which by coupling rises possibility for damaging of object, wherein transducers (T1, T2) and to them attached signal means (SC, RT1, RT2) are supplied with driving energy via transmission line (TLS, TL1, TL2) and via at least one isolation means (ISOLATION) and said transfer of driving energy takes place at radio frequency essentially higher than that of signals to being registered and that of said other electromagnetic energy.
2. An arrangement as set forth in claim 1, wherein at least part of needed isolation takes place in transmission line (TLS, TL1, TL2) in such a way that isolation means (ISOLATION) includes at least one coupling element, which transfer electromagnetic energy via electromagnetic field, such as for example capacitive (C, C1) or inductive coupling element.
3. An arrangement as set forth in claim 1, wherein isolation means (ISOLATION) include capacitive coupling element (C, C1), additionally element for reduction of coupling impedance, such as for example inductive element (L, L1), which is coupled in series with said capacitive element (C1) and eventually in parallel with said inductive element (L1) there is another capacitive element (C2), which generates parallel resonance with said inductive element (L1) at frequency, which is one of interference frequencies appearing in environment, such as excitation frequency of magnetic resonance imaging device or operating frequency of electric knife.
4. An arrangement as set forth in claim 1, wherein transmission line (TL, TLS) one may attach means (SPL1, SPL2) for dividing transmission line to two or more transmission lines (TL1, TL2).

5. An arrangement as set forth in claim 1, wherein transfer of registered signals to central unit (CU, TR3) takes place via some other transmission path (TL2) and this transmission path may be wireless communication, such as for example radio, magnetic field, ultrasound or infrared communication.
6. An arrangement as set forth in claim 1, wherein transfer of registered signals to central unit (CU, TR3) takes place via same transmission path as power transmission for signal means (SC, RT1, RT2) and advantageously via same isolation means (ISOLATION).
7. An arrangement as set forth in claim 1, wherein operation of power means (POSC, PA) of arrangement is time wise discontinuous.
8. An arrangement as set forth in claim 1, wherein registration means (TRI1, TRI2) include for storage of information memory means, such as semiconductor memory, for example Flash memory.
9. An arrangement as set forth in claim 1, wherein signal is modulated by signal means (SC, RT1, RT2) in such a way, that needed reliability, and signal bandwidth is achieved using one or some of following methods for modulation: amplitude, frequency, phase, spread spectrum, OFDM and ultra wide bandwidth modulation.
10. An arrangement as set forth in claim 1, wherein at least one of it's blocks (CU, TRI1, TRI2) are connected to at least one data network such as piconetwork according to the Bluetooth standard or Internet.
11. An arrangement as set forth in claim 1, wherein at least one of it's unit (A, SC, CU, TRI1, TRI2) may be controlled and properties of operation, such as for example gain or bandwidth, may

be changed via data network, local or wide area network, such as piconetwork according to Bluetooth standard or Internet.

12. An arrangement as set forth in claim 1, wherein at least part of it is placed in means to be carried by person or animal or otherwise intimately associated, such as clothing (CL), diving means, protection means or patient bed (BED) and it includes one or several transducer means (TU1, TU2) for registering information from one or some of following: human body, animal body (P), a device to be carried with, such as for example gas bottle, and environment.

13. An arrangement as set forth in claim 1, wherein it is used for monitoring physiologic signals from person (P) under medical diagnostic or therapeutic activity, such as surgical operation, intensive care or magnetic resonance imaging.

14. An arrangement as set forth in claim 1, wherein registration units such as for example amplifiers (AMPLIFIERS) are in vicinity of transducers (T1, T2) such as electrodes (ELECTRODES) and when circumstance so requires, for example in vicinity of magnetic resonance imaging device, are realized using one or some of following techniques: flip-chip, gluing and bonding.

15. An arrangement as set forth in claim 1, wherein central unit (CU) of arrangement is connected via wired or wireless transmission path (CP1) to some means (CPM, TD) of other system such as patient monitoring system or telephone network.

16. An arrangement as set forth in claim 1, wherein at least one of it's unit may be controlled using commands according to protocol, for example WAP-protocol, of connected network utilizing terminal device (TD), for example mobile phone, wrist computer, such as diving computer or means of some other system such as means (CPM) of patient monitoring system.

17. An arrangement as set forth in claim 1, wherein at least in some part of transmission line (TL, TL1, TL2) there is one or several connector (CON) including contacting surfaces for contacting

conductive parts (IC1, IC2, OC1, OC2) of trans-mission line and means for securing connection (MG1, MG2) such as for example magnet, thread, bail, bayonet or Velcro tape.

18. An arrangement as set forth in claim 1, wherein transmission line (TL) is integral part of essentially compliant structure, such as for example catheter (CAT) or signals coil means of magnetic resonance imaging device, such as surface or endoscopic coil, which includes at least one part (TIP) including means (TRANS) for detecting signal to be registered, such as for example NMR signal and for processing of signal (SC) and for transferring over isolation (ISOLATION) and necessary power means (D1, C1).

19. An arrangement as set forth in claim 1, wherein at least one of registration units of arrangement include means for collecting image information, such as for example CMOS or CCD circuit.

20. An arrangement as set forth in claim 1, wherein arrangement is used for X-ray imaging, such as for X-ray imaging of dentition or joints.

21. An arrangement as set forth in claim 1, wherein registration means include one or several operational means, such as laser or drill means, means for generation of Overhauser phenomena, means for detection of electron spin resonance, means for hyperthermia or means for lighting.